

REMARKS

Claims 1-17, 19 and 21 are currently pending.

35 USC § 103 - Hanson

Claims 1-17, 19 and 21 stand rejected under 35 USC § 103(a) as being unpatentable over Hanson (USPN 5,509,915). Applicants respectfully traverse this rejection.

Claim 1 recites, *inter alia*, a Cover Layer with a pore volume distribution curve with a maximum at a pore radius (abbreviated herein as "PVDmax") greater than or equal to 50 μm and with a wetting angle at the surface of at least 120°. Claim 1 further recites a liquid transfer layer with a PVDmax of from 105 to 325 μm .

In response, the Examiner has relied upon Hanson. According to the Examiner, "The difference between Hanson and claim 1 is the provision that [the] covering layer has a wetting angle of at least 120 degrees and that the liquid transfer layer explicitly discloses a specific pore radius." Official Action of 1/25/2008 at page 3.

Applicants respectfully assert that Hanson does not teach or suggest the presently claimed invention.

Cover Layer

The Examiner asserts that it would have been obvious to modify the wetting angle of the alleged Cover Layer of Hanson to arrive at the presently claimed invention. Applicants respectfully disagree.

Hanson discloses a wetting angle of less than 90°. The presently claimed Cover Layer has a wetting angle of at least 120°.

Wetting angle measures the interaction of a liquid and a material surface. A wetting angle of less than 90° means a surface is wettable. A wetting angle of great than 90° means a surface is nonwettable. 90° is a threshold point - in that a change from below 90° to above 90° is a significant change. *Declaration of Barbro Moberg Alehammar, paragraph 6.*

Accordingly, a shift from less than 90° to at least 120° clearly has significant impact on the functionality of the surface. Because of the significance of the change, such a change is not simply the routine discovery of an optimum or workable range, as asserted by the Examiner.

To provide an example, please consider a reaction that uses liquid water as a medium. In a first example, the prior art teaches a water medium temperature of 40°C. An inventor discovers that 70°C provides better results. Thus, the temperature of the water medium is changed from 40°C to 70°C, for a change of 30°C. This change of 30°C may simply be the discovery of an optimum or workable range.

However, consider a second example where the prior art teaches a water medium temperature of 80°C. An inventor discovers that 110°C provides better results. Thus, the temperature of the water medium is changed from 80°C to 110°C, for a change of 30°C. However, the "water" is now in the form of steam.

In both the first and second examples, there was a temperature change of 30°C. In the second example, however, the 30°C change also crossed a threshold point (100°C - the boiling point of water) making the change in 30°C much more significant. The change of 30°C in the second example is a significant change - the medium went from liquid water to steam. Thus, because of the significance of this change, the discovery of the new temperature cannot be asserted to be routine experimentation to one skilled in the art. Clearly, not all changes in a range are simply the ***routine*** discovery of an optimum or workable range.

Applicants respectfully assert that the presently claimed invention is not simply the routine discovery of an optimum or workable range. The change is from a wetting angle of below 90° to greater than 120° - this change crosses the threshold point of 90°. Accordingly, a proper *prima facie* case of obvious has not been presented, and cannot be presented with the art of record.

Hanson Teaches Away

Further, in contrast to the Examiner's position that it would have been obvious to modify the wetting angle of Hanson to arrive at the presently claimed invention, Hanson actually ***teaches away*** from the presently claimed invention. Hanson discloses that *wetting angles of less than 90°* are desired in at least selected areas of the surge management portion, and provides material examples to reduce the wetting angle below 90°. (Col. 26, lines 9-16; wettable fibers have wetting angles less than 90° - see Col 12, lines 45-50). Hanson also provides material examples to *reduce* the wetting angle *below 90°*. (Col. 26, lines 17-26).

In contrast, the wetting angle in the present claims is at least 120°. Accordingly, it is respectfully submitted that Hanson clearly *teaches away* from the covering layer having a wetting angle of at least 120° as recited in claim 1. Noting that it is the Examiner's position that it would be obvious to one of ordinary skill in the art to modify the wetting angle, Applicants direct the Examiner's attention to MPEP § 2143.01, wherein it is provided that if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. (See, In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)).

Unexpected Results

And, perhaps most significantly, the presently claimed invention provides unexpectedly improved results compared to those of Hanson.

Tests have been conducted to show the effects of using a Cover Layer according to Hanson compared to using a Cover Layer according to an embodiment of the presently claimed invention. Four different Cover Layers ("CL") were prepared/tested:

- (1) A CL according to an embodiment of the invention with a
PVDmax at 65 µm and a wetting angle of 123°;
- (2) A CL with a
PVDmax at 65 µm and a wetting angle of 0°;
- (3) A CL with a
PVDmax at 35 µm and a wetting angle of 125°;
- (4) A CL with a
PVDmax at 35 µm and a wetting angle of 0°.

Declaration of Barbro Moberg Alehammar, paragraph 3.

Each CL was combined with a transfer layer ("TL") with a PVDmax of 147 µm. Each combination was tested for (A) Liquid-Admission Speed, (B) Amount of Liquid Residuals and (C) Dryness. *Declaration of Barbro Moberg Alehammar, paragraph 7.*

The tests are significant because they are exemplary of competing factors in an absorbent article. It is essential that an article is capable of receiving and rapidly admitting liquid. It is also important for the surface of the article to be kept as dry as possible, even after wetting, and for liquid which has passed into the article to remain there and not leak back out towards the skin of a user. These factors are typically

competing, such that the prior art does not disclose an article where each of these factors have been satisfactorily balanced.

The test results show that the embodiment of the presently claimed invention provides an unexpectedly improved performance in all three (A, B, C) tests. It is also important to note that these results are performed with a uniform Transfer Layer in order to isolate the effects of the Cover Layer:

	(1) Embodiment of the present invention	(2)	(3)	(4)
Liquid- Admission Speed (seconds)	1.5 s	1.8 s	2.3 s	2.3 s
Amount of Liquid Residuals (g/m ²)	~0 g/m ²	~12 g/m ²	~14 g/m ²	~25 g/m ²
Dryness (to the touch)	Dry to touch	Wet to touch	Wet to touch	Wet to touch

See *Declaration of Barbro Moberg Alehammar, paragraph 11*.

Accordingly, the presently claimed invention provides a Cover Layer that provides unexpected results compared to any alleged Cover Layer of Hanson. The presently claimed Cover Layer has the fastest Liquid Admission speed, yet is also capable of doing so while providing a Cover Layer that does not have any residual liquid and is dry to the touch. The presently claimed Cover Layer is clearly superior to that of the asserted art.

Accordingly, Hanson does not teach or suggest a cover layer with a PVDmax greater than or equal to 50 μm and a wetting angle of at least 120°. Accordingly, Hanson does not teach or suggest the presently claimed invention.

Transfer Layer

The Examiner asserts that it would have been obvious to modify the PVDmax of the Transfer Layer of Hanson to arrive at the presently claimed invention. Applicants respectfully disagree.

The presently claimed Transfer Layer has a PVDmax of 105 to 325 μm . The Examiner asserts that Hansen teaches a liquid transfer layer (allegedly layer 71)

including a pore radius greater than 50 micrometers. The Examiner relies on column 17, lines 8-11, of Hanson. However, this section of Hanson recites that "***no more than about 5 percent of the maximum pores ... are greater than about 50 micrometers in diameter.***" If no more than 5% are greater than 50 μm in diameter, then 95% would be less than 50 μm in diameter. That would mean that 95% are less than 25 μm in radius (the claim using radius). And, if 95% are less than 25 μm , then the PVDmax is necessarily below 25 μm .

Thus, Hanson discloses a PVDmax of below 25 μm . The presently claimed invention has a PVDmax of 105 to 325 μm . A PVDmax of less than 25 μm is not a valid starting point for arriving at a PVDmax of 105 to 325 μm - at least not by routine optimization. Applicants respectfully assert that a PVDmax of 105 to 325 μm is ***not*** a routine discovery of an optimum or workable range based on the starting point of less than 25 μm .

Unexpected Results

Moreover, the presently claimed invention provides unexpectedly improved results over the Hanson article. Tests have been conducted to show the effects of using a Transfer Layer (TL) according to Hanson compared to using a TL according to an embodiment of the presently claimed invention. A Cover Layer with a PVDmax of 65 μm and a wetting angle of 123° was used with (1) A TL with a PVDmax of 147 μm ; and with (2) a TL with a PVDmax of 20 μm . The combination of the CL with each TL was tested for (A) Liquid-Admission Speed, (B) Amount of Liquid Residuals and (C) Dryness. *Declaration of Barbro Moberg Alehammar, paragraph 7.*

The tests are significant because they are exemplary of competing factors in an absorbent article. It can be essential that an article is capable of receiving and rapidly admitting liquid. It is also important for the surface of the article to be kept as dry as possible, even after wetting, and for liquid which has passed into the article to remain there and not leak back out towards the skin of a user. These factors are typically competing, such that the prior art does not have an article where each of these factors have been satisfactorily balanced.

The test results show that the presently claimed invention provides an unexpectedly improved performance in all three (A, B, C) tests. It is also important to

note that these results are performed with a uniform Cover Layer in order to isolate the effects of the Transfer Layer:

	(1) Embodiment of the present invention	(2)
Liquid-Admission Speed (seconds)	1.5 s	48 s
Amount of Liquid Residuals (g/m ²)	~0 g/m ²	~57 g/m ²
Dryness (to the touch)	Dry to touch	Wet to touch

See *Declaration of Barbro Moberg Alehammar, paragraph 11*.

Accordingly, the presently claimed invention provides a Transfer Layer that provides unexpected results compared to the alleged Transfer Layer of Hanson. The presently claimed Transfer Layer has an incredibly faster Liquid Admission speed, and is also capable of doing so while providing a Cover Layer that does not have any residual liquid and is dry to the touch. The presently claimed Cover Layer is clearly superior to that of the asserted art.

Accordingly, Hanson does not teach or suggest a transfer layer with a PVDmax of 105 to 325 μm . Accordingly, Hanson does not teach or suggest the presently claimed invention.

§ 103 - Hanson Conclusion

In sum, the presently claimed invention is patentable over Hanson. Applicants respectfully assert that the presently claimed invention is not simply the routine discovery of an optimum or workable range - with regard to both the cover layer and the transfer layer. Further, Hanson teaches away from having a cover layer with a wetting angle of at least 120°. Moreover, the presently claimed invention provides unexpectedly improved results over the Hanson article - with regard to both the cover layer and the transfer layer.

CONCLUSION

In view of the above amendments and remarks, Applicants respectfully submit that the claims of the present application are now in condition for allowance, and an early indication of the same is earnestly solicited.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference would be helpful in resolving any remaining issues pertaining to this application; the Examiner is kindly invited to call the undersigned counsel for Applicants regarding the same.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: 17 September 2008

By:

A handwritten signature in black ink, appearing to read "T.D. Boone", written over a horizontal line.

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